II. REMARKS

United States Serial No. 10/811,096 was filed on March 26, 2004.

Claims 1-90 were originally filed in the present application.

A Restriction Requirement was mailed by the Office on February 6, 2007. On March 30, 2007, Applicants responded to the Restriction Requirement by electing to prosecute the claims of the Group III in the present application and traversing the Restriction Requirement between Groups I and III.

An Election of Species Requirement was subsequently mailed by the Office on June 18, 2007. Applicants responded to the Election of Species requirement on August 20, 2007.

The present Office Action makes the Restriction Requirement final. Claims 47-57 and 90 are currently under consideration. In view of the remarks set forth herein, Applicants respectfully request reconsideration and allowance of claims 47-57 and 90.

Claims 47-57 and 90 are rejected under 35 U.S.C. §102 or, in the alternative, under 35 U.S.C. §103(a), in view of Farrington et al, Moreau et al, Vickers Jr et al, Bury et al, O'Brien et al, Marshall et al, or Bown et al for the reasons set forth in the Office Action.

The Present Claims

It is known to use pigments to impart color to a cementitious composition. However, the use of pigments generally decreases the slump and water demand of the cementitious composition to which they are added. The inclusion of an additional amount to meet the increased water demand results in the dilution of

the desired color and decreases the overall strength of the resulting cementitious structure.

The Applicants herein have invented a pigment dispersion that is stable over a long period of time and, because of the synergistic combination of polycarboxylate dispersant and thixotropic additive, maintains the pigment homogenously dispersed throughout the admixture while not increasing the water demand or diluting the resulting color of the cementitious composition. Thus, the application is directed to a liquid coloring suspension for coloring cementitious compositions, the suspension including a synergistic combination of a liquid, polycarboxylate dispersant, thixotropic additive and pigment. Given the combination of components of the liquid coloring suspension, it is unexpected and surprising that the liquid coloring suspension possesses a viscosity that decreases then stabilizes over time. None of the references cited alone or in combination disclose, suggest, or teach an admixture composition having the claimed components or the exhibited viscosity properties.

Farrington '174

Farrington '174 is directed to a cold weather admixture that accelerates the setting time and strength development of cementitious compositions. The cold weather admixture comprises an inorganic salt having freezing point depressing properties, an inorganic early strength set and strength accelerator, an organic set accelerator, and a polycarboxylate dispersant for cementitious compositions.

While the admixture disclosed in Farrington '174 may include a polycarboxylate dispersant and a pigment, it certainly does not disclose or suggest the inclusion of a thixotropic additive. The Office Action specifically alleges that the "pumping aids" disclosed by Farrington et al anticipate a thixotropic additive. Applicants respectfully disagree. A thixotropic additive imparts thixtropy to a particular material. The term thixotropy refers to the ability of a particular material (including dispersions and suspensions) having a first viscosity to become less viscous (i.e.-become thinner) upon an application of energy to the material, and then

to return to the first viscosity (i.e.-become thicker) when the applied energy is removed from the material. For example, a thixotropic colloidal gel having a first viscosity will liquefy when it is agitated, but will then return to gel form when at rest. Because Farrington '174 does not disclose a pigment dispersion containing a thixotropic additive, it does not anticipate the pending claims. Furthermore, there is simply no teaching, disclosure, or suggestion in Farrington '174 that the disclosed pumping aids for cementitious compositions imparts thixotropic properties to the pigment dispersion. For these reasons, Farrington '174 does not anticipate or render obvious the claimed liquid coloring suspension. Applicants respectfully request that these rejections be withdrawn.

Moreau '770 and '106

Moreau '770 and '106 have been cited against claims 47-57 and 90. Moreau et al '106 is a continuation of Moreau et al '770 and therefore both references share the same disclosure. Therefore, Applicants traversing remarks apply equally to both references.

Both Moreau '770 and '106 disclose a compatibilizing admixture for a high pozzolan cement composition, wherein the admixture includes a derivatized polycarboxylate dispersant and a set accelerator. Moreau '770 and '106 merely disclose that a water and/or pigment may be added directly to the cementitious composition. Neither Moreau '770 nor '106 disclose or suggest that the compatibilizing admixture itself may contain either a pigment or thixotropic additive. Therefore, Moreau et al do not disclose a stable pigment dispersion comprising a liquid, polycarboxylate dispersant, thixotropic additive and pigment, wherein the viscosity of the liquid coloring suspension decreases and stabilizes over time. Accordingly, neither Moreau '106 nor '770 anticipate the pending claims. Because both Moreau '106 and '770 simply disclose that pigments and polycarboxylate dispersants may be separately added to pozzolanic cementitious compositions, these references to not provide any suggestion or motivation for a stable pigment dispersion comprising a liquid, polycarboxylate dispersant,

thixotropic additive and pigment, wherein the viscosity of the liquid coloring suspension decreases and stabilizes over time. Accordingly, neither Moreau '106 nor '770 render the pending claims obvious.

Additionally, metakaolin is a known alumino-silicate pozzolan material that is obtained by calcining kaolin clay. Nowhere in Moreau'106 or '770 is it disclosed that metakaolin acts as a thixotropic additive. In any event, Moreau '106 and '770 merely disclose that metakaolin or silica fume may be added directly to the cementitious composition as a pozzolanic replacement for hydraulic cement binder. Nowhere do Moreau '770 or '106 disclose that there is a stable pigment dispersion including water, polycarboxylate dispersant, pigment and metakaolin. Applicants therefore respectfully request that these rejections be withdrawn.

Vickers '143

Claims 47-57 and 90 are not anticipated by Vickers '143. Vickers '143is directed to a pozzolanic cement composition. Vickers '143 does not disclose an admixture for cementitious compositions that includes a thixotropic additive or a pigment. Applicants have discussed the nature of a thixotropic additive in connection with the Moreau references above and that discussion is incorporated by reference into Applicants' remarks over the Vickers '143 reference. Vickers '143 does not disclose the inclusion of a thixotropic additive in a stable pigment dispersion admixture. Applicants do not deny that pigments may be added to cement compositions to impart color. However, Vickers '143 does not disclose a stable pigment dispersion admixture that includes a liquid, polycarboxylate dispersant, pigment and water, where the viscosity of the liquid coloring suspension decreases and then stabilizes over time. Thus, Vickers '143 does not anticipate the pending claims.

Vickers '143 does disclose that water and pigment may be separately added directly to a cementitious composition, but this does not provide any suggestion or motivation to include a thixotropic agent or a pigment in

combination with a polycarboxylate dispersant and a liquid to provide a stable pigment dispersion for cementitious compositions. It does not matter that the resulting cementitious composition disclosed in Vickers '143 may include a separately added pigment or other known additives. Applicants therefore respectfully request that the rejections over the Vickers '143 reference be withdrawn.

Bury '814

Bury '814 is directed to a dry cast cementitious composition. Bury '814 merely discloses that pigment may be added directly to the dry cast cementitious composition. Bury '814 does not disclose or suggest an admixture containing either a pigment or thixotropic additive. Therefore, Bury '814 does not disclose a stable pigment dispersion comprising a liquid, polycarboxylate dispersant, thixotropic additive and pigment, wherein the viscosity of the liquid coloring suspension decreases and then stabilizes over time. Accordingly, Bury '814 does not anticipate the pending claims.

Because Bury '814 simply discloses that pigments and polycarboxylate dispersants may be separately added to dry cast cementitious compositions, this does not provide any suggestion or motivation for a stable pigment dispersion comprising a liquid, polycarboxylate dispersant, thixotropic additive and pigment, wherein the viscosity of the liquid coloring suspension decreases and then stabilizes over time.

The dry cast cementitious composition is not "pumped" or "transported". Therefore, the consideration of keeping components of a liquid admixture as a homogenous dispersion or suspension for uniform introduction into a cement composition is not a consideration of dry cast cementitious composition. Therefore, it would not have been obvious to one of ordinary skill in the art to add a thixotropic additive to an admixture for a dry cast cementitious composition or to a dry cast cementitious composition, or to an admixture containing liquid,

polycarboxylate dispersant and pigment. Applicants therefore request that the rejections over the Bury '814 reference be withdrawn.

Bury '183

Bury '183 is directed to an admixture comprising a polycarboxylate dispersant, set retarder and strength improvement additive. Bury '183 does not disclose the inclusion of a thixotropic additive. Therefore, Bury '183 does not disclose a stable pigment dispersion comprising a liquid, polycarboxylate dispersant, thixotropic additive and pigment, wherein the viscosity of the liquid coloring suspension decreases and stabilizes over time. Simply because Bury '183 discloses that a pigment may be added to a cement admixture, it does not teach that that admixture provides a homogenous and stable dispersion of pigment within the admixture due to a synergistic combination of pigment, thixotrope, and dispersant. Accordingly, Bury '183 does not anticipate the pending claims.

Bury '183 is concerned with providing an admixture for cementitious compositions that increases the compressive strength of the resulting cementitious composition without negatively effectively the setting time of the composition. The disclosure of adding pigment is merely incidental to the Bury '183 invention. To the contrary, the present claims are directed to a homogeneous pigment dispersion having a stable viscosity over time to enable uniform transport of the dispersion and uniform coloring of a resulting cementitious composition. This is achieved by the synergistic combination of polycarboxylate dispersant, thixotropic additive and pigment. None of the issues regarding uniformity and/or viscosity stability are of concern or even mentioned in Bury '183. Thus, there is no disclosure in Bury '183 addressing the issue of providing and maintaining a homogeneous and stable pigment dispersion for coloring cementitious compositions. Consequently, Bury '183 does not provide any suggestion or motivation for a stable pigment dispersion comprising a liquid, polycarboxylate dispersant, thixotropic additive and pigment, wherein the viscosity of the liquid

coloring suspension decreases and stabilizes over time. Accordingly, Bury '183 does not render the pending claims obvious.

O'Brien

O'Brien '435 and '939 disclose a chemical composition including a liquid, bisulfite terminated oligomeric dispersant, a pigment and extenders. Neither O'Brien '435 nor '939 discloses the inclusion of a thixotropic additive. The disclosure of extenders or thickeners is not a disclosure of a thixotropic additive that imparts the property of thixotropy to the admixture. Additionally, the viscosities measured in O'Brien '435 and '939 are well below what the present inventors' experience indicates would provide a stable pigment dispersion, free of pigment stratification. Therefore, O'Brien do not disclose a stable pigment dispersion comprising a liquid, polycarboxylate dispersant, thixotropic additive and pigment, wherein the viscosity of the liquid coloring suspension decreases and stabilizes over time. Accordingly, neither O'Brien '435 nor '939 anticipate the pending claims.

O'Brien '435 and '939 are directed to coating compositions for paper. By contrast, the present claims are directed to a pigment dispersion for cementitious compositions. Because O'Brien '435 and '939 represent non-analogous art in a completely different fields of inventive endeavor, the O'Brien references do not address, and are not concerned with, providing a stable pigment dispersion for coloring cementitious compositions that does not increase water demand or effect any other property of the cementitious composition. Therefore, O'Brien does not provide any suggestion or motivation for a stable pigment dispersion comprising a liquid, polycarboxylate dispersant, thixotropic additive and pigment, wherein the viscosity of the liquid coloring suspension decreases and stabilizes over time. Accordingly, neither O'Brien '939 nor '435 render the pending claims obvious. Applicants therefore request that the rejections over the O'Brien references be withdrawn.

Marshall '292

Marshall et al '292 is directed to a liquid dishwashing detergent for automatic dishwashing applications. The liquid dishwashing detergent is intended to be a replacement for granular products. Among other components, the liquid dishwashing detergent includes enzymes, an enzyme stabilizing system, and a detergent surfactant. Marshall '292 expressly discloses that the cleaning benefit is achieved via the enzymes and detergent surfactant. See Column 1 at Lines 47-49. Thus, the enzymes and surfactant are critical to the invention. Marshall '292 discloses to include a viscoelastic thixotropic thickener to the dishwashing detergent, presumably for the purpose of thickening the composition to provide a gel, concentrated gel, or paste detergent composition. See Column 15 at Lines 3-9. Nowhere in Marshall '292 is it disclosed that the dishwashing detergent has a viscosity that, due to a synergistic combination of dispersant and thixotrope, the viscosity decreases and then stabilizes over time. Furthermore, Applicants also note that none of the 21 inventive examples of the dishwashing detergent reported in Marshall '292 include a pigment. To the contrary, each example includes a dye, most likely an easily incorporated water soluble dye. Thus, Marshall et al '292 does not disclose a thixotropic pigment dispersion. Applicants therefore respectfully request that the rejections be withdrawn.

Bown '308

Bown '308 discloses a process for preparing an aqueous suspension of ground particulate material. The process includes preparing an aqueous suspension of coarse particulate material, grinding the suspension in the presence of a polycarboxylate dispersant and adding further polycarboxylate dispersant after the grinding step. The Examiner expressly concedes that Bown '308 does not disclose the addition of a thixotropic additive. Therefore, the present claims are not anticipated and the 102 rejection should be withdrawn.

With respect to the 103 rejection, the viscosities reported in Bown '308 are only measured to 24 hours, which does not represent the long term stability of the suspension. Additionally, the viscosities reported in Bown '308 are well below what the Applicants herein know to produce a stable pigment dispersion over time without stratification of the pigment. Finally, there is no mention or suggestion anywhere in Bown '308 of the inclusion of a material, such as a thixotropic additive, to influence the rheological properties of the particulate suspension. To the contrary, Bown '308 is merely concerned with a controlled grinding process in the presence of dispersant while maintaining a specific pH of the suspension. Applicants therefore request that the 103 rejection be withdrawn.

Gleeson et al

Gleeson et al is directed to a fiber-reinforced cement product that contains cement, reinforcing fibers and two low density components, namely, volcanic ash and hollow ceramic microspheres. Gleeson et al teach that thickeners and pigments may be added to the fiber-reinforced cement. However, Gleeson teaches to add the pigments and thickeners directly to the cement. There is no suggestion or motivation to provide a pigment dispersion including a dispersant, pigment and thixotropic additive. Furthermore, the disclosure of a thickening additive cannot be automatically equated with a thixotropic additive. A thickening additive simply increases the viscosity of a material to which it is added. On the other hand, a thixotropic additive imparts the property of thixotropy to a material to which it is added. Moreover, the present claims are directed to a pigment dispersion wherein the viscosity actually decreases over time, even with the inclusion of a thixotropic additive. None of the primary references disclose the combination of liquid, pigment, dispersant and thixotropic additive to form a stable pigment dispersion. The additional teachings of Gleeson et al do not cure this defect, as nowhere in Gleeson is it disclosed to prepare a liquid admixture or suspension containing a thixotrope or pigment. Applicants therefore request that the 103 rejections over each primary reference in combination with Gleeson et al be withdrawn.

McCurrich et al

McCurrich et al is directed to a pumpable cementitious composition containing cement, dispersing agent and a gelling agent. McCurrich et al teach addition of a gelling agent directly to the cementitious composition. However, there is no suggestion or motivation to provide a pigment dispersion that is to be added to a cement composition, the dispersion including a dispersant, pigment and thixotropic additive. Furthermore, the disclosure of a gelling agent cannot be automatically equated with a thixotropic additive. Again, a gelling agent simply implies that it increases the viscosity of a material to which it is added. On the other hand, a thixotropic additive imparts the property of thixotropy to a material to which it is added. Moreover, the present claims are directed to a pigment dispersion wherein the viscosity actually decreases over time, even with the inclusion of a thixotropic additive. None of the primary references disclose the combination of liquid, pigment, dispersant and thixotropic additive to form a stable pigment dispersion. McCurrich et al are concerned with pumping the cementitious composition, whereas the present application is concerned with pumping a pigment dispersion to be added to a cementitious composition. The additional teachings of McCurrich et al do not cure the defects of the primary references, as nowhere in McCurrich is it disclosed to prepare a stable pigment admixture or suspension containing a thixotrope and a pigment. Applicants therefore request that the 103 rejections over each primary reference in combination with McCurrich et al be withdrawn.

Carpenter et al.

Carpenter et al is directed to a cement slurry composition for well bore applications. Carpenter et al are concerned with the thixotropic nature of the cement slurry composition itself, not an admixture that it to be added to the cement slurry composition. On the other hand, the present claims are concerned with a thixotropic pigment dispersion which may be added to a cementitious composition. There is no suggestion or motivation to provide a thixotropic

pigment dispersion including a dispersant, pigment and thixotropic additive. Moreover, the present claims are directed to a pigment dispersion wherein the viscosity actually decreases over time, even with the inclusion of a thixotropic additive. None of the primary references disclose the combination of liquid, pigment, dispersant and thixotropic additive to form a stable pigment dispersion. The additional teachings of Carpenter et al do not cure the defects of the primary references, as nowhere in Carpenter et al is it disclosed to prepare a liquid admixture or suspension. Applicants therefore request that the 103 rejections over each primary reference in combination with Carpenter et al be withdrawn.

Harris

Harris is directed to a cement composition for pavement patching applications. The Harris composition comprises Portland cement, alpha gypsum, pozzolan and a polymer modifier. It is disclosed that this combination of materials produces a resulting composition having good long term durability, as compared to prior art combinations of Portland cement and alpha gypsum. The polymer modifier, such as an acrylic latex, enhances the bonding characteristics of the composition. Harris discloses the inclusion of water reducers, set accelerators and set retarders in the cementitious composition, and Applicants do not deny that these types of materials a commonly added to cementitious compositions. However, Harris simply discloses that these types of materials are directly added to the cementitious composition. Nowhere does Harris disclose or suggest a liquid admixture composition comprising a thixotropic pigment dispersion.

As discussed above, none of the primary references disclose the combination of liquid, pigment, dispersant and thixotropic additive to form a stable pigment dispersion. Example No. 1 of Harris discloses a mortar prepared from the combination of Portland cement, alpha gypsum, silica fume (pozzolan), fine aggregate, water reducers and set controlling agents. Harris does not disclose that the Example includes a polycarboxylate dispersant, a pigment or a thixotropic agent. Moreover, it appears that each component was separately added directly to

the hydraulic binder to prepare the mortar composition and that a liquid admixture comprising a combination of components was not used. Furthermore, Harris is not at all concerned with providing a thixotropic pigment dispersion that exhibits stability and uniformity over time. The additional teachings of Harris do not cure the defects of any of the primary references. Applicants therefore request that the 103 rejections over each primary reference in combination with Harris be withdrawn.

In view of the above amendments and remarks, Applicants respectfully request that the 102 and 103 rejections be withdrawn and that the Examiner issue a formal notice of allowability directed to claims 47-57 and 90. Should the Examiner have any questions regarding this Response, the undersigned attorney would welcome a telephone call.

Respectfully submitted,

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